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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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| 09/404,979 | 09/22/99 | GOPAL T | GENAPP.002RA |

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| MCKELVEY, T | |
| **ART UNIT** | **PAPER NUMBER** |
| 1636 | 3 |

**DATE MAILED:** 04/05/00

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

| Application No. | Applicant(s) |
|---|---|
| 09/404,979 | Gopal |
| **Examiner** | **Group Art Unit** |
| Terry A. McKelvey | 1636 |

☐ Responsive to communication(s) filed on _____ .

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire TWO month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained only under the provisions of 37 CFR 1.136(b), in advance of expiration of the shortened statutory period for reply.

TMc 3/31/00

**Disposition of Claims**

☒ Claim(s) *1-20* is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☒ Claim(s) *1-11 and 14* is/are allowed.

☒ Claim(s) *15-20* is/are rejected.

☒ Claim(s) *12-13* is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

**Application Papers**

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____ .

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____ .

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

**Attachment(s)**

☐ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

*--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---*

**DETAILED ACTION**

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 CFR 1.821 through 1.825 for the reason(s) set forth on the attached Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures.

Applicants are required to comply with all of the requirements of 37 C.F.R. §§ 1.821 through 1.825. *Any* response to this Office Action which fails to meet *all* of these requirements will be considered non-responsive. The nature of the noncompliance with the requirements of 37 C.F.R. §§ 1.821 through 1.825 did not preclude the continued examination of the application on the merits, the results of which are communicated below.

***Information Disclosure Statement***

The information disclosure statement filed 11/19/99 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently

understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered, with regard to the 0 544 292 A2 reference only.

***Claim Objections***

Claims 12-13 and 15-20 are objected to because of the following informalities:

With regard to claim 12, a required comma is missing between "gene" and "a" in line 5 of claim 12.

With regard to claim 12, the word "gene" was misspelled as "gens" in lines 3 and 4.

With regard to claim 13, a required comma is missing between "gene" and "a" in line 7 of claim 13.

With regard to claims 15-18, each of the claims recite "nuclear localization signal (NLS)". If the full term is going to be fully spelled out, then "(NLS)" is redundant. If the abbreviation is going to be used, then the full term should not also be spelled out, except in the first claim that uses the

abbreviation, which is claim 1. Amending the claims to remove the redundant terminology would be remedial.

Appropriate correction is required.

***Reissue Applications***

The original patent, or an affidavit or declaration as to loss or inaccessibility of the original patent, must be received before this reissue application can be allowed. See 37 CFR 1.178.

The patent sought to be reissued by this application is involved in litigation. Any documents and/or materials which would be material to the patentability of this reissue application are required to be made of record in reply to this action.

Due to the related litigation status of this application, EXTENSIONS OF TIME UNDER THE PROVISIONS OF 37 CFR 1.136(a) WILL NOT BE PERMITTED DURING THE PROSECUTION OF THIS APPLICATION.

While there is concurrent litigation related to this reissue application, action in this reissue application will NOT be stayed because there are no significant overlapping issues

between the application and that litigation. Due to the related litigation status of this reissue application, EXTENSIONS OF TIME UNDER THE PROVISIONS OF 37 CFR 1.136(a) WILL NOT BE PERMITTED.

Claims 17-20 are rejected under 35 U.S.C. 251 as being based upon new matter added to the patent for which reissue is sought. The added material which is not supported by the prior patent is as follows:

Claims 17-18 are drawn to a transfection vector in a kit, and outside a cell, respectively, which transfection vector comprises a synthetic polypeptide linked electrostatically to a DNA structural sequence, forming a polypeptide-DNA complex, wherein said polypeptide is comprised of a NLS. The parent application as filed does not describe the broad concept of the transfection vector being specifically in a (generic) kit, nor does the application describe the broad concept of the transfection vector being specifically outside of a (generic) cell. The applicant in the reissue oath filed 9/22/99 indicates that support for these claims is found throughout the application, specifically at column 1, lines 5-10 and Example 1. However, a close examination of the application did not reveal a clear description of the broadly claimed invention of claims 17-

18, even at the sections specifically pointed to. The sections pointed to provide a description of the transfection vector, but fail to describe the limitation of the transfection vector as a part of a generic kit, or present outside of a generic cell. Even if one infers from Example 1 that the transfection vector is in a kit or present outside of the cell, one would infer this within the context of the specific example, but not that the specific example describes the broader invention of the transfection vector in a generic kit or outside of a generic cell is envisioned by the applicant. Therefore, there is no description of the invention of claims 17-18.

Claims 19-20 also partly depend on claims 17-18 and accordingly are not described in the parent application as filed, for the reasons described above for claims 17-18.

***Double Patenting***

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims

so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 17-18 are objected to under 37 CFR 1.75 as being a substantial duplicate of claim 15. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claims 17-18 are directed to a transfection vector in a kit or outside a cell, which transfection vector has the same limitations as the transfection vector of claim 15. What actually is being claimed is the vector itself, even though it is being claimed in a particular type of location. There is no evidence of record that the location that the claimed transfection vector is in imparts any materially different characteristic onto the vector itself, and thus it appears that the claimed transfection vector itself, regardless of its location, is identical to the vector present located at any other location. Therefore, the transfection vector of claims 17-18 appear to be identical to the transcription vector of claim 15 and thus claims 17-18 are substantial duplicates of claim 15.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 15, 17-18, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Szoka, Jr. et al (6).

Szoka, Jr. et al teach a transfection vector and a method of producing a transfected or transformed eukaryotic cell comprising presenting to a cell (which reads on transfecting or transforming the cell) a transfection vector which is a polynucleotide in combination with one or more functional elements for cell delivery (columns 5, 8, and 31-33). As a part of the presentation process, the transfection vector is present outside of the cell. This reference teaches that the polynucleotide can be a DNA structural sequence (column 9). One component of the transfection vector taught by the reference is a DNA-associating moiety which is a molecule that can interact with nucleic acids in a noncovalent fashion, such as polycations including polylysine, polyarginine, etc, (which reads on a synthetic

polypeptide linked electrostatically to DNA) (columns 8 and 11). Another component of the transfection vector that is taught as specifically being covalently linked to the DNA-associating moiety, is a subcellular localization component, such as a nuclear-localization component (which reads on a nuclear localization signal) (column 13). Szoka, Jr. et al also teach compositions comprising the transfection vector, which compositions read on the transfection vector being in a kit, because the composition by itself can be considered to be a kit (column 8).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szoka, Jr. et al (6).

Szoka, Jr. et al teach a transfection vector and a method of producing a transfected or transformed eukaryotic cell comprising

presenting to a cell (which reads on transfecting or transforming the cell) a transfection vector which is a polynucleotide in combination with one or more functional elements for cell delivery (columns 5, 8, and 31-33). As a part of the presentation process, the transfection vector is present outside of the cell. This reference teaches that the polynucleotide can be a DNA structural sequence (column 9). One component of the transfection vector taught by the reference is a DNA-associating moiety which is a molecule that can interact with nucleic acids in a noncovalent fashion, such as polycations including polylysine, polyarginine, etc, (which reads on a synthetic polypeptide linked electrostatically to DNA) (columns 8 and 11). Another component of the transfection vector that is taught as specifically being covalently linked to the DNA-associating moiety, is a subcellular localization component, such as a nuclear-localization component (which reads on a nuclear localization signal) (column 13). Szoka, Jr. et al also teach compositions comprising the transfection vector, which compositions read on the transfection vector being in a kit, because the composition by itself can be considered to be a kit (column 8).

Szoka, Jr. et al do not specifically teach purifying the transfection vector, or use of the transfection vector to transform a mammalian cell line.

However, purification of reagents used for transfection/transformation of cells is and was well known and routine in the art because purification removes interfering contaminants such as other proteins and microorganisms, needed for controlled effectiveness of the reagents and maintenance of sterility of the transfected/transformed cells. Although the reference does not specifically teach transformation of mammalian cells with the transfection vector, it does teach transfection/transformation of eukaryotic cells, which encompasses mammalian cells, and the reference does teach transfection/transformation into mammalian cells of different embodiments of transfection vectors (for example, HeLa cells, see column 16), but not specifically for the specific claimed transfection vector.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to purify the transfection vector taught by Szoka, Jr. et al because Szoka, Jr. et al teach that the transfection vector is to be used in transporting nucleic acids into cells and it is and was well known in the art

to purify transfection components prior to use. One would have been motivated to do so for the expected benefit of controlling the effectiveness of the reagent and maintaining the sterility of the cells, which is and was well known in the art. Given the teachings above, absent evidence to the contrary, there would have been a reasonable expectation of success that the transfection vector taught by Szoka, Jr. et al could be purified prior to use in transfection into cells.

It would have also been obvious to one of ordinary skill in the art at the time the invention was made to use the transfection vector taught by Szoka, Jr. et al to transfect or transform any eukaryotic cell, including mammalian cells, because Szoka, Jr. et al teach that the transfection vector can be used with eukaryotic cells (which encompasses mammalian cells) and the reference specifically teaches use of other embodiments of transfection vectors to transfect/transform mammalian cells. One would have been motivated to do so for the expected benefit of being able to transform any eukaryotic cell, including mammalian cells, as taught by the cited reference. Given the teachings above, absent evidence to the contrary, there would have been a reasonable expectation of success that the transfection vector

taught by Szoka, Jr. et al could be used to transform mammalian cells.

***Allowable Subject Matter***

Claims 1-11 and 14 are allowed. Claims 12-13 are objected to and will be allowable once the objections are obviated.

The following is a statement of reasons for the indication of allowable subject matter:

The closest prior art is Szoka, Jr. et al (6) which teaches a transfection vector and a method of producing a transfected or transformed mammalian or eukaryotic cell or cell line comprising transfecting or transforming a cell with the transfection vector, wherein the vector comprises a synthetic polypeptide electrostatically linked to a DNA structural sequence, said polypeptide also comprising a nuclear localization signal (throughout the reference). This reference does not anticipate or make obvious with any other prior art reference of record a transfection vector further comprising a hinge region of neutral amino acids that connects a polymeric chain of basic amino acid residues (which is the part that complexes with DNA) to the NLS, because there is nothing that teaches or suggests that the hinge

region should be specifically present between the basic amino acid polymeric chain and the NLS.

***Conclusion***

Please specifically note, for this action in a reissue application, a shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this action. Failure to respond within the period for response will cause the application to become abandoned.

Also, any extensions of time must be requested in advance under the provisions of 37 CFR 1.136(b) only.

Certain papers related to this application may be submitted to Art Unit 1636 by facsimile transmission. The faxing of such papers must conform with the notices published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 C.F.R. § 1.6(d)). The official fax telephone numbers for the Group are (703) 308-4242 and (703) 305-3014. NOTE: If Applicant *does* submit a paper by fax, the original signed copy should be retained by applicant or applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED so as to avoid the processing of duplicate papers in the Office.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terry A. McKelvey whose telephone number is (703) 305-7213. The examiner can normally be reached on Monday through Friday, except for Wednesdays, from about 6:30 AM to about 5:00 PM. A phone message left at this number will be responded to as soon as possible (usually no later than 24 hours after receipt by the examiner).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. George Elliott, can be reached on (703) 308-4003.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

**Terry A. McKelvey, Ph.D.**
**Primary Examiner**
**Art Unit 1636**

April 4, 2000